

Nucleonica Trainers.....

Joseph Magill, Ph.D.

Education

PhD in Computational Plasma Physics
University of Glasgow, 1975

Summary of Experience

Dr. Magill has more than 20 years experience in nuclear science and is the author of four books, more than 150 scientific publications and 10 patents.

Following a Ph.D. in computer simulation of laser driven fusion processes, he took up a position as theoretical physicist with the European Commission. He is one of the pioneers of the field of laser nuclear science in which nuclear reactions are induced by lasers – thereby offering a simple and inexpensive way of studying nuclear processes without a nuclear reactor or particle accelerator. Dr. Magill was a member of the Technical Working group on ADS and is one of the authors of the report: "A European Roadmap for Accelerator Driven Systems for Nuclear Waste Transmutation". He has acted as consultant to the IAEA in Vienna on Partitioning and Transmutation of Nuclear Waste, and coordinated a European benchmark exercise on radiotoxicity of spent nuclear fuel. Dr. Magill is an author on radiochemistry and nuclear chemistry in the Encyclopedia of Life Support Systems or EOLSS, an interdisciplinary encyclopedia sponsored by UNESCO.



He is currently sector head of Advanced Nuclear Studies and action leader for Knowledge Management, Education and Training at the Joint Research Centre in Karlsruhe, Germany. Dr. Magill is also the JRC representative on Education, Training and Knowledge Management working group of the Sustainable Nuclear Energy Technology Platform (SNETP)

He is the originator of Nuclides 2000, Nuclides.net, and the Nucleonica Nuclear Science Portal. Since 2003 he has been responsible for the organisation of nuclear science training courses based on the use of this internet technology. His current activities also include the management of the Karlsruhe Nuclide Chart – and the publication of the latest 7th edition.

George Lasche, Ph.D.

Education

Ph.D. in Applied Science
University of California, 1983
Master of Science in Physics and Nuclear Engineering
Massachusetts Institute of Technology, 1977
Master of Business Administration
Long Island University, 1980
Bachelor of Science
U.S. Military Academy at West Point, 1969

Summary of Experience

Dr. George Lasche has more than 20 years experience in nuclear science and is the author of over 30 peer-reviewed scientific publications, conference papers and patents.

He has served as an Associate Professor of Physics at West Point, and as a research associate at Lawrence Livermore National Laboratory, where he conducted research in laser fusion. He was Principal Investigator for four high altitude balloon experiments in Australia and Antarctica to analyze nuclear radiation from Supernova 1987A, and served as a State Department advisor to the UN inspection teams in Iraq in 1991. From 1992 to 1995 he was the Director of the Electronic Warfare Vulnerability Assessment Laboratory, and subsequently the Director of the High Energy Laser Systems Test Facility, both at White Sands Missile Range, New Mexico.



He is currently a member of the technical staff at Sandia National Laboratories, where he was Project Manager for measurement and analysis of the nuclear radiation environment in container ships at sea. He is best known as the author of the "Cambio" nuclear spectral file translation and analysis software, which is now in use by over 600 analysts worldwide, and has been integrated into the Nucleonica web site. He is the technical chair for the ANSI N42.42 standard on nuclear data file formats, now under revision, and is currently conducting research in applied methods of spectral data analysis for the interdiction of illicit nuclear traffic. He is also serving as a Triage and Secondary Reachback Analyst to assist front line officers with resolution of possible nuclear terrorism activities.

Mustafa Çağatay TUFAN, Ph.D

Education

PhD in Nuclear Physics
Ondokuz Mayıs University, Samsun, TÜRKİYE, 2007

Summay of Experience

Dr. Tufan started his master course in 1998 and has occupied a Research Assistant position at the department of Physics in the university of Ondokuz Mayıs up to 2009. After his Ph.D. he became an Assistant Professor at the same university. He worked at the Institute of Transuranium Elements between 2006 and 2007 as a Seconded National Expert.

His research interest is interaction of charged particles, especially the theoretical calculations of Stopping Power and Range. He has several papers on this subject, and coded a computer program which calculates Range and Stopping Power in Nucleonica. He lectures Nuclear and Particle Physics, General Physics, Modern Physics and Computer Programming at the university. He currently has several master students and is one of the responsible persons for constructing the Environmental Radioactivity Laboratory in Ondokuz Mayıs University.



Verena Kleinrath

Verena Kleinrath is a young nuclear physicist from Austria. She graduated from Vienna University of Technology specializing in nuclear and particle physics in summer 2010. Her main research interests include radiation detection and nuclear security.

Throughout the last year of her master studies she worked with the Nucleonica team in Karlsruhe, doing her thesis on the application of Nucleonica tools onto realistic nuclear security issues. The project focused on the prevention of illicit trafficking of nuclear material and included extensive gamma spectrometric experiments that could also be used to validate the Gamma Spectrum Generator and easy Monte Carlo tools. She could present her results at the International Youth Nuclear Congress in South Africa and the IEEE Nuclear Science Symposium in the US.

During her time at the ITU, Verena also had the chance to support the Nucleonica team with the training courses, the gamma library module and the implementation of a nuclide identification program (WESPA) into the nuclear science web portal.

Currently she is pursuing her PhD in nuclear physics and working as a scientist in the Austrian Competence Center for Tribology, where she is investigating non-equilibrium thermodynamics of friction, wear and corrosion using thin layer activation.



Rolf Arlt, PhD

Education

PhD in Nuclear Physics
Technical University of Dresden, 1976

Summary of Experience

Dr. Arlt has more than 40 years experience in nuclear science and applications and is the author of more than 250 scientific-technical publications in this field.

With a PhD in Physics (nuclear spectrometry of short lived radioisotopes produced at the synchrocyclotron in Dubna and absolute fission cross section measurements) he worked at the Technical University of Dresden.

In 1983 Dr. Arlt received an offer to join the Department of Safeguards of the International Atomic Energy Agency in Vienna. In the subsequent decades he worked in the field of development and implementation of new methods for nuclear safeguards and nuclear security. He was also designated Safeguards inspector in several IAEA Member States, where he amongst others supported the development and implementation of gamma spectrometric methods and passive neutron assay for the verification of spent fuel. He has pioneered the introduction of spectrometric CdZnTe detectors coupled to a miniature Multi Channel Analyzer, developed for the IAEA and Euratom under the German Support Programme.

After his retirement he continued to work for the IAEA as Cost Free Expert in the field of Nuclear Security, supported by Germany. He contributed with instruments and procedures for the radiological security of major public events (the 2004 Olympic Summer games in Athens, the 2006 Soccer World Championship in Germany, transferring experience and lesson learned with respect to radiological security to other major public events such as the 2007 Pan American Games in Rio de Janeiro and the 2008 Olympic Summer Games in Beijing).

Recently, after retiring from the IAEA, he contributed with lectures on gamma spectrometry and isotope identification related to nuclear security in Nucleonica nuclear science training courses based on the use of internet technology, developed at the JRC-Karlsruhe.



Raymond DREHER, Dipl. d'Ing.

Education:

Diplôme d'Ingénieur, option Génie physique
Institut National des Sciences Appliquées de Lyon, France, 1969

Summary of Experience:

Raymond Dreher had the opportunity to join the group of Prof. Hertz at the University of Karlsruhe where he acquired a first-hand experience in NMR pulse spectroscopy on the measurement of relaxation times of different alkali nuclides as salts in water solution. Raymond was also involved in the automation of this kind of measurement using programmable mini computers.

Later, Raymond joined a software startup where he was involved in many software projects covering a wide range of areas: automation of an infra-red spectrometer, in the material testing, data acquisition of a mechanical stress test machine, verifying and controlling of a steel production installation using and processing the data from sparks- and arc-spectrometers. Another main

activity was the development of access control systems using different kind of card readers, information systems via intranet, and to the data exchange with payroll systems like Paisy and SAP R/3.

A few years ago, Raymond joined the Nucleonica team at ITU. One of his first tasks was to implement a relational database containing international evaluated datafiles such as JEFF3.1, Nubase 2003, and ICRP68/72, which forms the heart of Nucleonica. Raymond also developed new Nucleonica applications, using the latest web 2.0 technology and web services, and is continuously improving existing modules through the use of Ajax controls and java scripting. Raymond is also involved in the new electronic version of the Karlsruhe Nuclide Chart which is currently under development by the Nucleonica team.



Zsolt Soti, PhD

Education

MSc Mathematics- Computer Science University of Novi Sad (Yugoslavia)
PhD in Medical Informatics University of Lübeck (Germany)

Summay of Experience

At the beginning of his career Dr. Soti designed and optimised complex relational databases on UNIX servers. At 1994 he started to work on medical informatics and developed a Picture Archiving and Communication System for medical images (PACS) at the University of Szeged (Hungary). This was a pioneering project to use standardised formats to send/receive and save medical images. From the archived radiology and nuclear medicine examinations, several web-portals for educational purposes were created.



As of 2001 he continued to design and develop Picture Archiving System for nuclear medicine at the Schleswig-Holstein University in Germany. In that time he started with multidisciplinary research on the mathematical models of quantifications of 4-Dimensional Positron Emission Tomography examinations. He did his doctoral work on that topic. Dr. Soti is author about of 10 scientific publications. He has more than 20 years experiences in computer science. During his professional life he developed, designed and validated several ICT systems. For example, he was involved in projects for disaster recovery of large databases, secure and encrypted network communication, certifications, standardisation and expert judgement of different IT systems and development of different intranet applications.

As of 2009 Dr. Soti is an IT developer at the Joint Research Centre in Karlsruhe, Germany. He works on project related to the Nuclear Training and Knowledge Management Group. His main topics are: radioactive mixture identification based on gamma spectrum analysis and radiation therapy simulations with charged particles. Dr. Soti is technically responsible for standalone and intranet versions of Nucleonica.

Andrey Berlizov, Ph.D

Education

PhD in Nuclear and Particle Physics

Institute for Nuclear Research, Kiev, UKRAINE, 1995

Master of Science in Experimental Nuclear Physics

Kiev State University, Kiev, UKRAINE, 1991

Summay of Experience

Dr. Berlizov has over 20 years experience in nuclear science and applications and is the author of more than 60 scientific publications in this field, including peer-reviewed articles, book chapters and conference papers.

After his PhD on "Two photon emission in electromagnetic transitions of atomic nuclei" Dr. Berlizov worked as a scientific researcher in the Nuclear Physics Department of Kiev State University, where he combined teaching activities with experimental researches in the field of nuclear spectroscopy. In 1997 he shifted to the Institute for Nuclear Research (INR) of the National Academy of Sciences of Ukraine. Since 1998, as a head of the Neutron Activation Analysis Laboratory, Dr. Berlizov has been involved in the trace element analysis of environmental samples and technological materials at the 10 MWt nuclear research reactor WWR-M in Kiev. Since 1999 he has been joining the INR's expert team on the characterization of nuclear and other radiological materials seized from illicit trafficking. Since 2001 he has been working as a deputy head of the Centre for Ecological Problems of Atomic Energy. In the period from 2007 to 2009 he was working at the Institute for Transuranium Elements as a visiting scientist. Since 2004 he is a member of the scientific and advisory board of the Journal of Radioanalytical and Nuclear Chemistry.



Dr. Berlizov's research interests are nuclear spectroscopy, radioanalytical chemistry, non-destructive assay of nuclear materials, environmental radioactivity, nuclear forensics. He is a developer of several measurement systems and techniques, including a system for continuous radiation monitoring of the first loop coolant of power nuclear reactors, for which in 2006 he was awarded a State Prize of Ukraine in Science and Technology. He is also an expert in scientific programming, computer modelling and simulation. In these fields he is particularly known as a developer of the neutron activation analysis prognostic code NAAPRO, of the correlated particle extension of the general purpose Monte Carlo transport code MCNP-CP, and of the web-based Gamma Spectrum Generator in Nucleonica.